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COMMENTS ON THE MINUTES OF NEW BEDFORD WASTEWATER SECONDARY TREATMENT CITIZENS ADVISORY COMMITTEE MEETING OF AUGUST 19, 1987

1. PAGE 3, PARAGRAPH 2

   Pilot study portrayed as dredging and storing "a small amount of low level contaminated PCB waste."

   Comment: The study will only be truly valid and useful if very high level PCB wastes are utilized.

2. PAGE 3, PARAGRAPH 2

   The "Pineapple upside down cake" solution is again being proposed. GIDLAB still objects to this method for the same reasons cited to EPA over two years ago:

   1. Unnecessarily disturbs hot spot areas, some of which would be best impounded as is with greater safety and less cost.

   2. The storage and de-watering of the dirty material presents a considerable air pollution hazard.

   3. The depth of excavation necessary to locate chemically clean and environmentally safe material may be very considerable--at such depths unusable ledge, rocks and boulders may occur.

   4. The cost of dredging up the so-called "clean material" and de-watering it (even partially) is a very considerable extra expense--which expense can be avoided by better alternative methods available.

3. PAGE 3, PARAGRAPH 6: Last sentence on the page

   The statement that "the upper estuary contains more heavy metals than PCBs" is totally false. The upper estuary contains PCBs in concentrations up to 100,000 p.p.m.--the total of all toxic metals (lead, chromium, cadmium, selenium, copper and zinc) in the upper estuary is less than 510 p.p.m. (GIDLAB 1974 EN-719 survey for New England Electric Power Company).

4. PAGE 4, PARAGRAPH

   Mr. Civialtieri is quoted as saying "it is an option to using the same area for the Superfund Project and the Facilities Plan."

COMMENTS ON THE MINUTES OF THE NEW BEDFORD WASTEWATER SECONDARY TREATMENT CITIZENS ADVISORY COMMITTEE MEETING

This combination would be an extraordinary economic, environmental, chemical and technological error because of:

1. Great differences in toxic hazards: the handling of harbor sediments being at least 10,000 times more toxic to handle (operator and environmental safety) and to dispose of.

2. The Superfund Facility is primarily a one-time cleanup operation which would, upon project completion, be closed forever. The Waste Facilities project is continuing and ongoing forever.

5. PAGE 4, PARAGRAPH 5

Dr. Bowen asks the question can sludge, heavy metals and PCBs be incinerated.

GIDLAB Comment: Heavy metals can not be incinerated.

6. PAGE 5, PARAGRAPH 5

GIDLAB strongely disagrees with EPA's position to seek and study the similarities of the Superfund Project and the Wastewater Project. GIDLAB perceives this viewpoint and procedure as another unfortunate delaying tactic to the solution of the major problem (cleanup of the harbor).

The greatest danger is not a minor "overlap" between these two projects, but a continuing overlap--indeed a continuing duplication--of studies of the harbor problem.

September 12, 1987

Dr. P. T. Gidley, F.A.I.C., F.A.A.A.S.
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MERRILL HOHMAN – E.P.A.
See red notations

Superfund Program Information Sheet

EPA Region I

New Bedford Harbor Site
New Bedford, Massachusetts

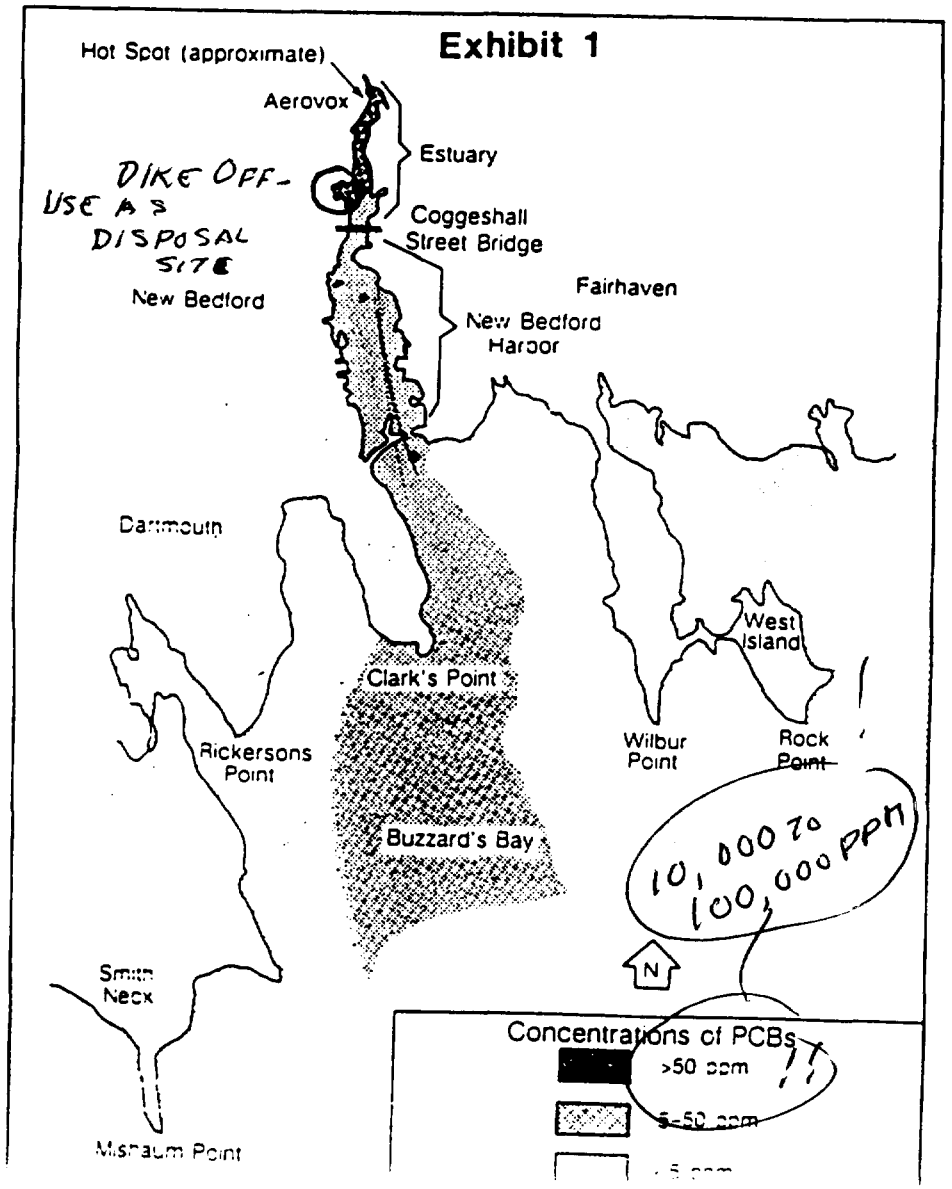
April 1987

This fact sheet updates U.S. Environmental Protection Agency (EPA) activities at the New Bedford Harbor Superfund site. Words that appear in **bold print** are explained in a glossary on page 6.

BACKGROUND

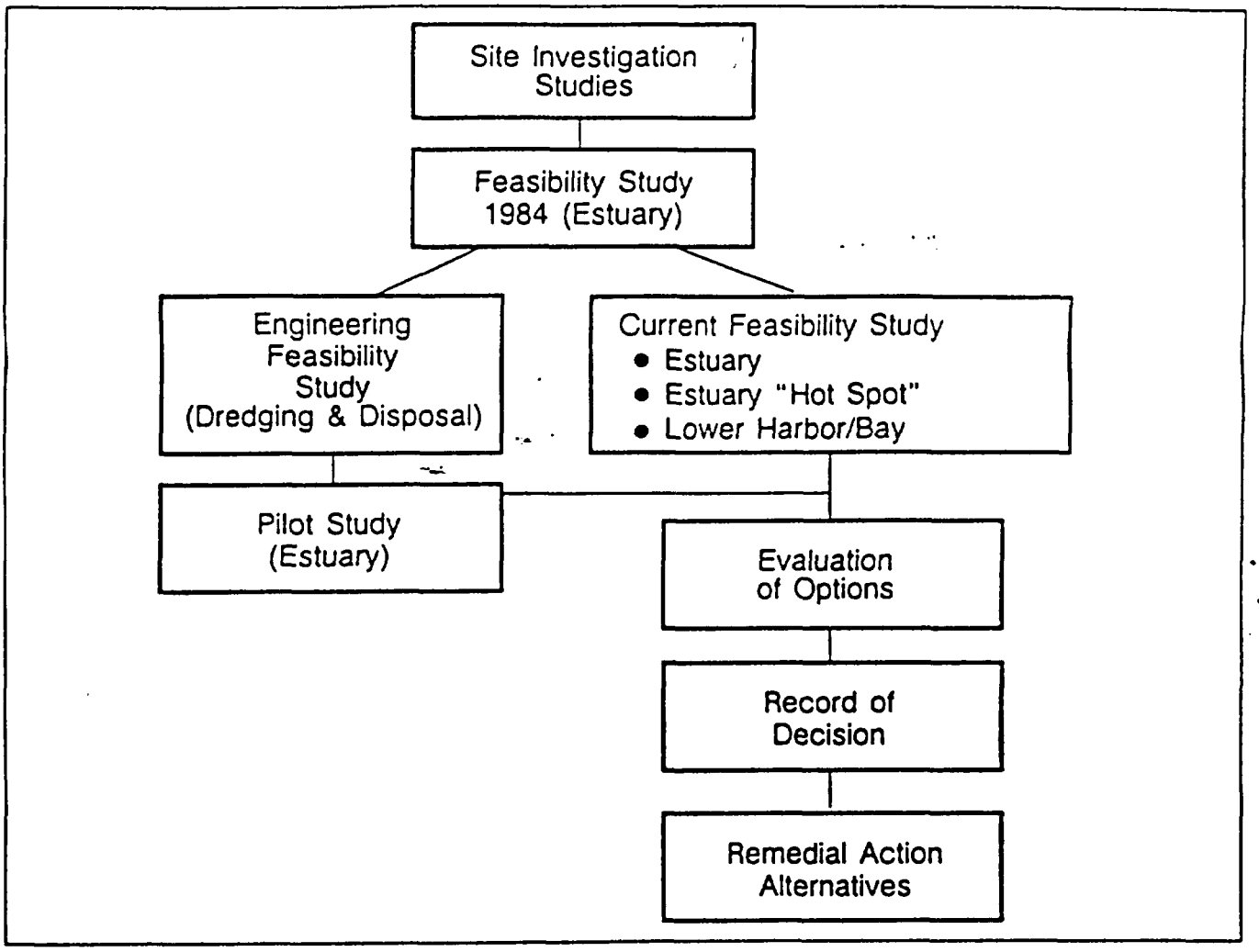
During the 1970s a number of environmental studies identified polychlorinated biphenyls (PCBs) and other contaminants in the **sediments** and marine life of New Bedford Harbor and parts of Buzzard's Bay (see Exhibit 1). Studies conducted by EPA in 1980 led to New Bedford Harbor being proposed in 1982 to the National Priorities List — a listing of the nation's worst hazardous waste sites — thus making it eligible for federal Superfund cleanup funds.

Exhibit 1



The three main areas under EPA investigation are the estuary, the estuary "hot spot," and the lower harbor/bay (see Exhibit 1). The estuary is the area of the site above the Coggeshall Street Bridge. The "hot spot" is an area of extremely high PCB contamination at the northern tip of the estuary. The lower harbor/bay includes Buzzard's Bay and the waters below the Coggeshall Street Bridge.

EXHIBIT 2: New Bedford Harbor Superfund Process



Initial EPA work at the site included a Feasibility Study, to develop possible alternatives for addressing the highly contaminated mudflats and **sediments** of the estuary north of the Coggeshall Street Bridge. This study was deemed necessary because extremely high levels of **PCBs** and **heavy metals** in these locations appeared to pose a risk to public health, public welfare, and the environment.

EPA completed the draft **Feasibility Study** for the estuary which evaluated a series of **remedial action alternatives** in August 1984. Comments received by EPA on these proposed remedial alternatives raised a number of concerns regarding the lack of experience and knowledge about operations of this type and complexity. In response to these concerns, EPA sought the assistance of the U.S. Army Corps of Engineers (the Corps) to conduct a supplemental study referred to as an Engineering Feasibility Study (EFS). To support the data in the EFS, EPA and the Corps will conduct a pilot study. Both the EFS and the pilot study are described on pages 3-4.

Additional studies are being conducted on the estuary as part of a new, separate **Feasibility** Study (FS) Report which EPA is carrying out for the entire New Bedford Harbor site.

The current FS will address contaminants from the estuary to Buzzards Bay. The scope of this FS is described on page 5. Exhibit 2 shows the overall Superfund process at the New Bedford Harbor site.

PILOT STUDY

Because the New Bedford Harbor site is a very large area (over 1,000 acres) and contamination is widespread throughout the harbor's ecosystem, EPA is undertaking a series of studies to ensure that the remedial action alternatives implemented at the site are effective. The purpose of both the EFS and the pilot study is to evaluate available dredging and dredged material options for addressing contamination in the estuary.

The EFS is conducted primarily in a laboratory to examine sediment samples taken from various parts of the estuary. In addition to laboratory investigations, the EFS includes reviews of technical literature on past dredging projects, and studies of physical aspects of the harbor, including tidal conditions in the estuary. However, to verify results of the laboratory and engineering studies in the field, a pilot scale study is performed after these other studies have been completed and before final selection of an alternative. A pilot study is a small scale field test of proposed alternatives in the environment where they are to be applied.

EPA and the Corps will conduct a pilot study in the estuary to provide critical information concerning the five subject areas listed below. This information will aid EPA in the selection of the most efficient and cost effective cleanup option for the entire estuary.

In addition to providing information about these five specific issues, the pilot project also will enable EPA to establish realistic cost information for the various remedial action alternatives being considered for the estuary as well as alternatives being studied for the harbor.

Two of the alternatives for disposal of contaminated sediment to be examined in the pilot study are the construction of disposal areas in the waters of the estuary. These two alternatives are the construction of a Confined Disposal Facility (CDF) followed by the construction of a Confined Aquatic Disposal area (CAD). (See Exhibits 3 and 4).

Dredging Options: During the pilot study EPA will compare results for two or more types of dredging equipment.

Sediment Resuspension: A major concern of any dredging option is that contamination will be scattered and spread beyond its current location. The pilot study will determine both the rate of sediment resuspension, and contaminant release under various site conditions.

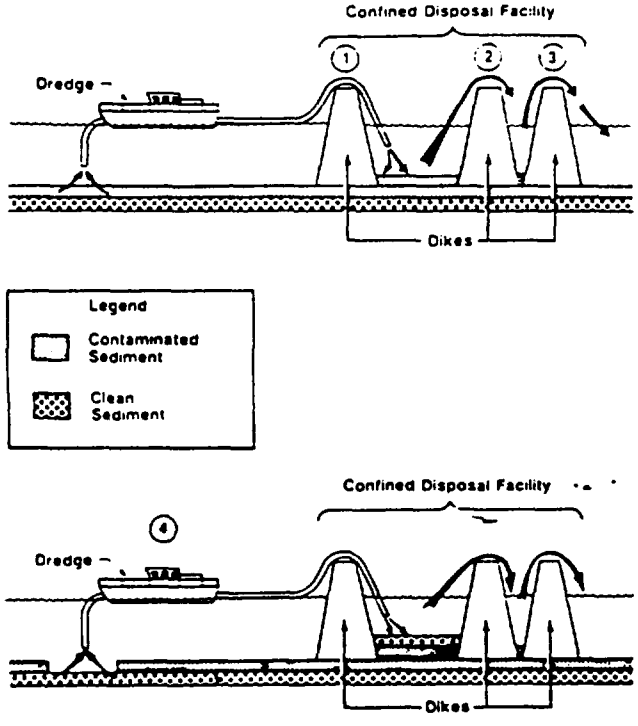
Stabilizing Dredged Material: One means of controlling contaminated sediments is stabilization. Contaminated dredge material would be mixed with other materials to cause it to solidify in such a way that contamination becomes completely immobile. Because stabilizing dredged material under field conditions has never been conducted, the pilot study will test the methods and materials necessary to stabilize a portion of the contaminated sediment.

Disposal and Treatment Methods: A Confined Disposal Facility (CDF) -- an area that has been diked off -- will be constructed to store contaminated sediments (see Exhibit 3). EPA will then determine the degree and cost of treating the water in the diked area that is brought up with the sediment. Also EPA will consider pilot testing sediment treatment technologies which will permanently destroy or isolate PCBs in sediment dredged during the pilot study.

Underwater Disposal: The pilot study will investigate the feasibility of disposing contaminated sediments underwater (see Exhibit 4) in a Confined Aquatic Disposal Area (CAD). Questions to be examined concern contaminant migration, the feasibility of using certain machinery underwater, and the strength and durability of the underwater disposal area over time.

Repeat GIDLAB earlier recommendation to try flyash or flyash + lime - Bradford Point Try Montaup or plant for flyash

EXHIBIT 3: CONFINED DISPOSAL FACILITY (CDF)



After construction of a CDF (see above) four steps will then be taken to cleanup a limited area of the estuary:

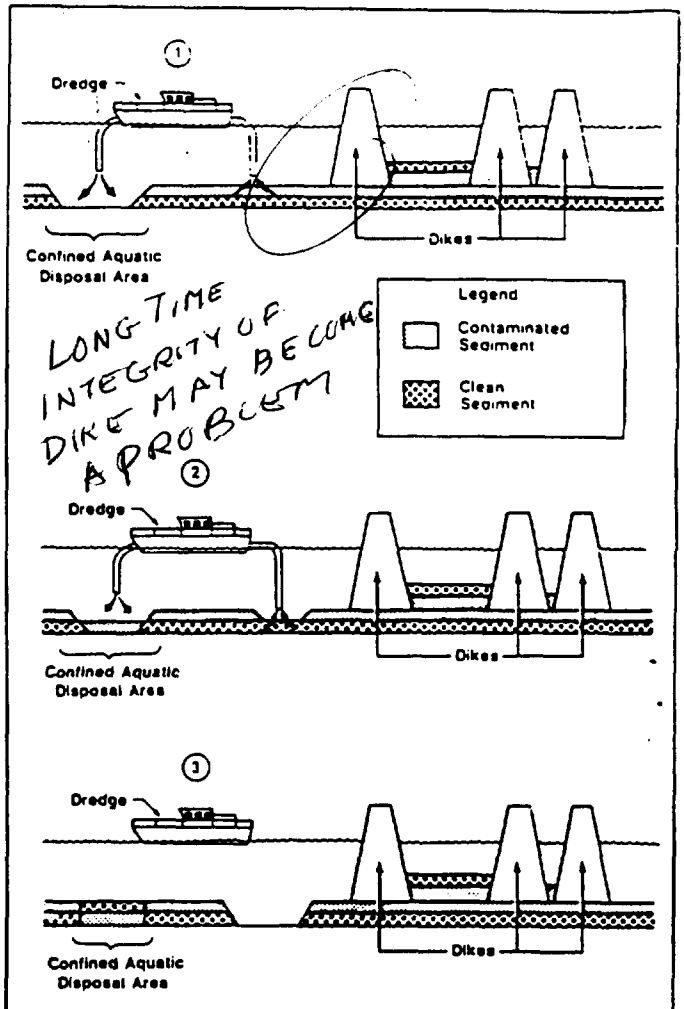
1 Contaminated **sediment** will be pumped *into one segment of the CDF from a* contaminated area of the estuary.

2 As the **sediment** settles, water from this area will be released into another segment of the CDF, called the Secondary Treatment Area where this water will then be decontaminated.

3 After the water in the Secondary Treatment Area has been tested and determined that the PCBs and other contaminants have been reduced to levels acceptable for discharge, the water will be discharged back into the estuary.

4 Clean **sediment** that was underlying the contaminated soil removed from the estuary, will be pumped into the CDF. The clean **sediment** will cap the contaminated **sediment**.

EXHIBIT 4: CONFINED AQUATIC DISPOSAL AREA (CAD)



The CAD will fill in trenches in the estuary floor created by the removal of **sediment** that has been deposited in the CDF. Following the removal of **sediment** from the estuary and the subsequent disposal and capping of the CDF, a depression is left in the bottom of the estuary floor. A two step process will then take place (see above)

1 This hole will be filled with a layer of contaminated **sediment** from another area of the estuary.

2 The layer of contaminated **sediment** will then be **capped** by clean **sediment** from below.

During these disposal operations, the pilot study will also test methods and gather information about water quality control during dredging. This information is required to meet standards set by EPA and the Commonwealth of Massachusetts and to ensure environmental protection. Moreover, operational controls and water *quality monitoring will be conducted during the* dredging operations. Long term monitoring, over three years, will also be performed to determine the effectiveness of the Confined Disposal Facility and Confined Aquatic Disposal Area.

SCOPE OF CURRENT FEASIBILITY STUDY

The estuary where the EFS and pilot study are being conducted is one of three areas being examined by EPA as part of the overall cleanup effort at the New Bedford Harbor site. The other areas under investigation include the lower harbor/bay and estuary "hot spot," each of which is described below. As part of the overall FS for the New Bedford Harbor site a number of other studies are underway. These include investigations in all three areas. The investigation and evaluation of cleanup options for the three areas will be combined into a single Draft Feasibility Study Report which will be released for public comment before any cleanup decisions are made by EPA.

Hot Spot: In the course of collecting sediment samples from the estuary it was determined that an area of sediments near the northern tip of the estuary (see Exhibit 1) contained PCBs at concentrations as high as 30,000 ppm -- ten times greater than in the other sediment samples. This area in the estuary has been termed by EPA as the "hot spot" and will be evaluated separately.

Lower Harbor/Bay: In addition to the estuary, EPA is conducting a study to evaluate the extent of the PCB and other contamination throughout the harbor/bay area.This study will rely on information generated from the pilot study and the EFS, and will build upon already completed air studies, a ground-water study, and evaluations of sediment samples.

Hydrodynamic & Food Chain Modeling: Computer models are being developed currently by EPA to assess the distribution, transport and fate of PCBs in the estuary and lower harbor, both through the movement of water and through marine organisms. These models will be used to evaluate the effects of cleanup options on PCB levels and distribution.

Risk Assessment: One requirement of the Superfund process is that a "no action" alternative be evaluated to determine what effect the current contamination would have if left untreated. This work entails assessing the potential hazard for human and biota populations to be exposed to PCBs and other contaminants and characterizing the subsequent risk to human health and the environment.

PCB Blood Levels: In addition to EPA activities at the New Bedford Harbor site, the Massachusetts Department of Public Health has recently completed a two-year study of PCB concentrations in the blood and urine of 1400 citizens living in the New Bedford Harbor vicinity. The study was funded by the Centers for Disease Control. For further information on this study contact:

Robert Kalaghan,
Massachusetts Dept. of Public Health,
(617) 996-8201

INITIAL SCREENING OF CLEANUP OPTIONS

While the above mentioned studies continue to gather the data necessary to define the extent of contamination in the three areas: the estuary; the estuary "hot spot;" and the lower harbor/bay, EPA has begun to list and examine the various technologies available to clean up these areas. The initial screening consisted of searching through all sources of information to create a comprehensive list of all potential cleanup technologies. The technologies were then screened in terms of effectiveness, ability to be implemented, and costs. Currently, 20 different types of technologies are being considered. The types of technologies are classified as removal, non-removal, treatment, and disposal and are briefly described below:

- **Removal Technologies:** Removal technologies include various means of dredging and excavation as well non-conventional technologies such as **sorbents and gels** -- compounds that bind themselves to contaminants facilitating removal or preventing **contaminant migration.**
- **Non-Removal Technologies:** Non-removal technologies include various types of containment -- such as a **cap,** and **insitu treatment** -- such as stabilization.
- **Treatment Technologies:** Treatment technologies include various means to permanently destroy or isolate PCBs in dredged **sediment.**
- **Disposal Options:** Disposal options include the construction of Confined Disposal Facilities (CDF) and Confined Aquatic Disposal (CAD) areas in addition to the removal of **sediments** to an off-site disposal area.

A final list of the best possible options for each of the three areas will be presented in the Draft **Feasibility Study** Report which will be published for public comment before final options are selected.

GLOSSARY

Capping
The placement of a layer of material on top of contaminated sediment in order to keep contaminants in place.

Contaminant Migration
The movement of contaminants from their point of disposal.

Ecosystem
The interacting community of plants and animals, and their nonliving surroundings.

Feasibility Study
See Remedial Investigation/Feasibility Study.

Heavy Metals
Metals including lead, chromium, and cadmium that can be toxic at relatively low concentrations.

Insitu treatment
The treatment of contaminants without removing them from their original place.

Polychlorinated biphenyls (PCBs)
A family of organic compounds used since 1926 in electrical transformers as insulation and in coolants, lubricants, carbonless copy paper, adhesives, and caulking compounds. PCBs are extremely persistent in the environment because they do not break down into new and less harmful chemicals.

PPM (parts per million)
A unit of measurement commonly used to express low concentrations of contaminants. For example, one ounce of PCBs in one million ounces of water is 1 ppm.

Remedial Action Alternatives
Proposed methods for cleaning up a Superfund site presented in the Draft Feasibility Study Report.

Remedial Investigation/Feasibility Study
A two part study of a Superfund site which is completed before a long term cleanup of a site can begin. The first part is the Remedial Investigation which examines the nature and extent of contamination problems. The second part is the Feasibility Study which evaluates different remedial action alternatives for site cleanup.

Resuspension
The churning up of sediments in water in a manner similar to the stirring up of dust resting on a table top.

Sediments
Solids that have settled to the bottom of a body of water.

Sorbents and Gels
Materials used to bond to contaminants to facilitate removal or prevent contaminant migration.

Upcoming Activities

EPA will hold a public meeting to explain the pilot study and other current studies on April 30 at 7:30 P.M. at the Whaler Inn on Hathaway Road in New Bedford. The meeting will be held in Room "C" and a Portuguese translator will be present.

Site related documents are available for public review at:

The Millicent Library
45 Center Street
Fairhaven, MA 02719
(617) 792-5342
9 am - 8 pm M W F
9 am - 6 pm T Th

The New Bedford Free Library
613 Pleasant Street
New Bedford, MA 02740
(617) 799-6291
9-9 M - Th
9-5 F and Sat.

Massachusetts Dept. of Public Health,
Office of Health, Education and
Environmental Information
Robert Kalaghan, Director
46-R Foster Street
Foster Hill Place
New Bedford, MA 02740
(617) 996-8201

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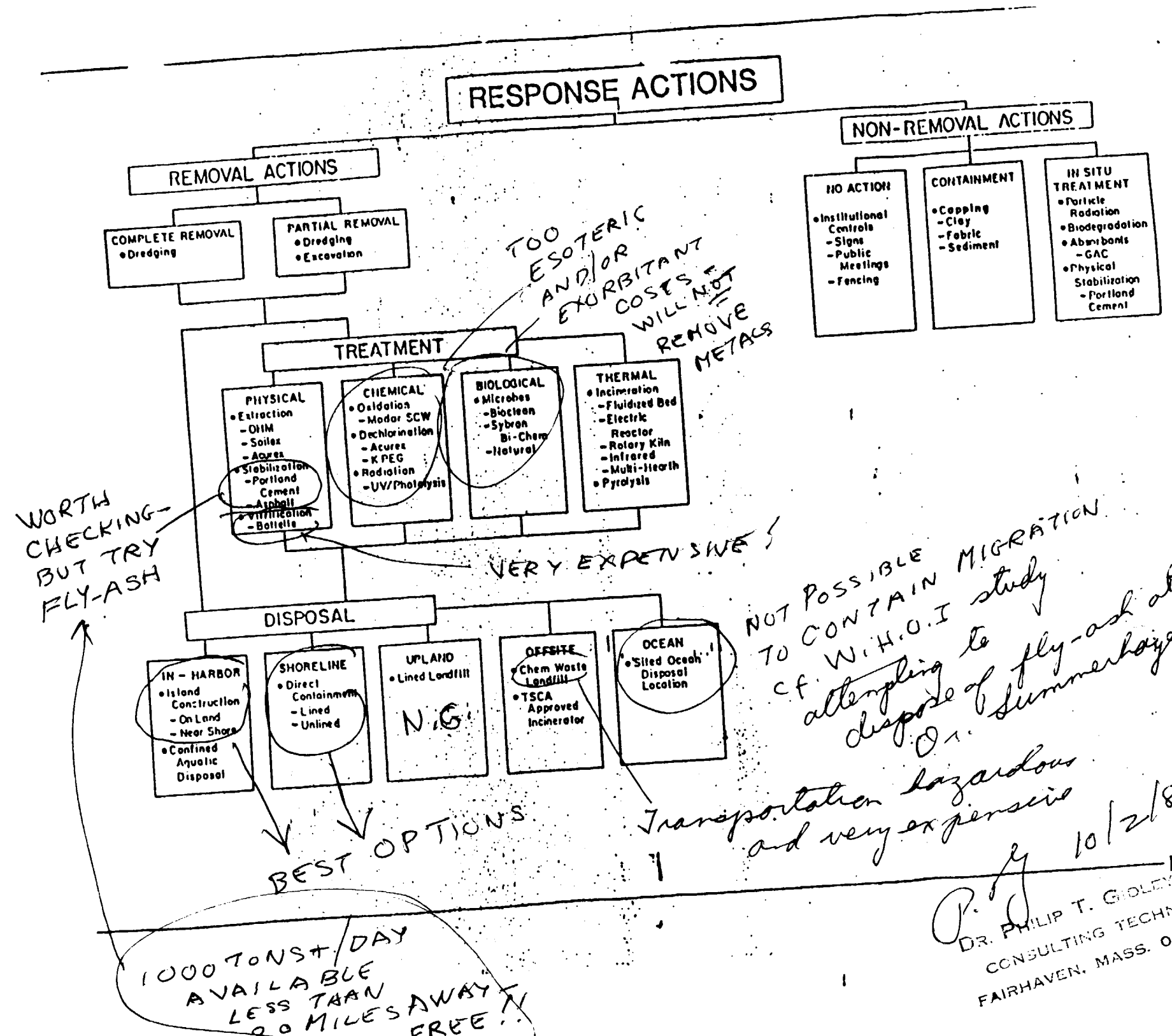
Para obter a versão em português desta exposiçao favor contatar Patty D'Andrea.



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